

Summary of Research



MONTANA FWP

Selected Results from Surveys of Landowners & Resident Hunters Regarding Chronic Wasting Disease (CWD) in Montana

HD Program Research Summary No. 49

Michael S. Lewis, Emily Almborg, Neil Anderson, Jennifer Ramsey, Ryan Rauscher, Peggy O'Neill, Marc Kloker, and Bob Gibson

August 2021

Abstract: *In 2021, Montana Fish, Wildlife & Parks (FWP) conducted surveys of landowners and resident hunters regarding their perceptions of chronic wasting disease (CWD) in Montana. Despite being concerned about the presence of CWD in the state, some landowners and hunters are not very aware of this wildlife disease. Thirty-seven percent of landowners did not know if CWD had been detected in areas of the state where they own land, and 35-46 percent of hunters did not know if CWD had been detected in the hunting district where they most prefer to hunt deer or elk. With respect to private land ownership, 22 percent of landowners are providing more big game hunting access than what they normally would have in places where they know CWD has been detected. However, the presence of CWD on the landscape is not dramatically affecting how most landowners manage their livestock. With respect to big game hunting, survey results show that CWD has not yet contributed to reduced hunting in places where this wildlife disease has been detected in Montana. Seventy-seven percent of hunters are very much concerned about eating harvested big game that has tested positive for CWD. While still a concern, less apprehension was expressed about field dressing (or processing) big game harvested in an area where CWD has been detected or eating an untested animal harvested from such an area. Lastly, survey results demonstrate support for potential management actions that focus on reducing white-tailed deer and mule deer populations in places where CWD has been detected, including the reduction of mule deer male densities/numbers in those areas. However, there was much less support for management actions that focus on eliminating hunting regulations aimed at producing more mature mule deer bucks in hunting districts where CWD has been detected or adjacent to those districts as a preemptive measure.*

BACKGROUND INFORMATION

Chronic wasting disease (CWD) is a disease of the central nervous system that is fatal to mule deer, white-tailed deer, elk, moose, and reindeer. The disease is caused by abnormally shaped proteins that can transform normal proteins into a mis-folded form. As these abnormal proteins accumulate, they result in tiny sponge-like holes in the brain and upper spinal cord tissue, eventually causing death.

CWD has been detected in captive or free-ranging wildlife populations in 26 U.S. states (Colorado, Wyoming, Montana, Utah, New Mexico, Texas, Kansas, Nebraska, Oklahoma, North Dakota, South Dakota, Minnesota, Iowa, Missouri, Arkansas, Wisconsin, Illinois, Michigan, Ohio, Pennsylvania, Tennessee, West Virginia, Virginia, Maryland, Mississippi, and New York), the Canadian provinces of Alberta and Saskatchewan, as well as Norway, Sweden, Finland, and South Korea. Its range continues to expand annually. Federal and state agencies are working to control spread of the disease in many of these areas. Population-level declines due to CWD have been documented in places where the disease has become quite prevalent.

In October 2017, CWD was first detected in free-ranging deer in Montana. To date, CWD has been found in more than 25 Montana hunting districts. At present, no known risks to humans, domestic livestock, or pets (including cats and dogs) have been identified from CWD.

Montana takes CWD very seriously and is counting on hunters, private landowners, and the public to help manage this wildlife disease. Along those lines, in 2021 as part of a United States Department of Agriculture (USDA) Animal and Plant Health Inspection Service (APHIS) Veterinary Services grant, FWP conducted surveys of private landowners and resident big game hunters in Montana regarding their perceptions of CWD.

This research summary provides selected findings from both the landowner and resident big game hunter surveys conducted by FWP in 2021. More detailed survey findings are available in a broader report available from FWP (Lewis, et. al. 2021). Of note, these two surveys build upon landowner and resident big game hunter surveys that were conducted in 2013 prior to the discovery of CWD in the state (Lewis, et. al. 2013). This summary focuses on the results of the 2021 surveys. However, several questions in 2021 are identical those asked in 2013, and data from both survey years are presented herein where comparable.



Private Landowner Survey. Rural private landowners who own at least 160 acres in Montana were the focus of the landowner survey in 2021. A random sample of 1,500 landowners was selected from the State Cadastral Database, and each of these landowners was sent a survey by mail. A subsequent follow-up mailing was sent to nonrespondents during the administration of the survey. Ultimately, the survey was successfully delivered to 1,458 landowners and there were 523 respondents to the landowner survey resulting in a 36 percent survey response rate.

Resident Big Game Hunter Survey. Montanans who held a big game hunting license from the 2020 general hunting season in Montana were the focus of the hunter survey in 2021. A randomly selected sample of 1,500 license holders was selected for this survey from FWP’s Automated License System (ALS), and each of these big game license holders was sent a survey by mail. A subsequent follow-up mailing was sent to nonrespondents during the administration of the survey. Ultimately, the survey was successfully delivered to 1,422 big game license holders and there were 476 respondents to the survey resulting in a 34 percent survey response rate.

It is important that private landowners, hunters, and others including the general public report to FWP any sick-looking deer, elk, or moose they encounter in Montana (typical symptoms of CWD include emaciation, listlessness, lack of responsiveness, excessive salivation, & lowered heads).

CONCERN ABOUT CWD IN MONTANA

A strong majority of landowners and hunters reported they are concerned about the presence of CWD in Montana (Figure 2). Resident big game hunters reported slightly higher levels of concern than private landowners.

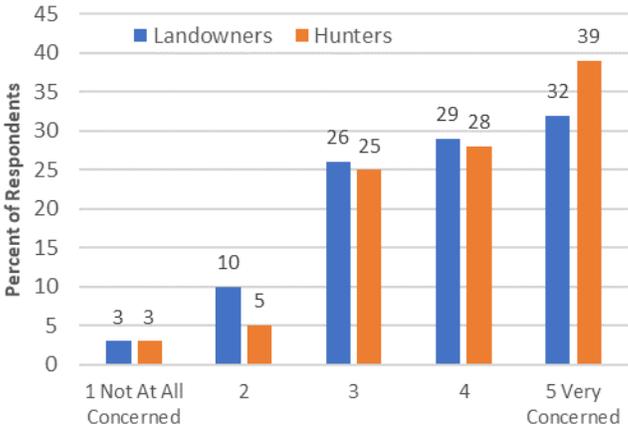
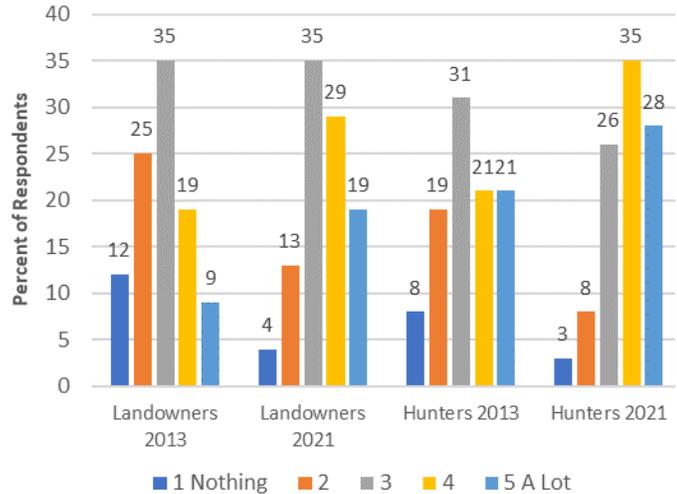
Figure 2. Response to: “On a scale from 1 (not at all concerned) to 5 (very concerned), how concerned are you about the presence of CWD in Montana?” (2021)

SURVEY RESULTS

KNOWLEDGE OF CWD

Participants from both the landowner and hunter surveys were asked about their knowledge of CWD. Despite the presence of this wildlife disease in Montana, a surprising number of respondents reported they had not heard much about CWD prior to receiving the survey (Figure 1). However, knowledge of CWD significantly increased from 2013 to 2021 for both landowners and hunters. It should be noted that CWD had yet to be detected in Montana in 2013.

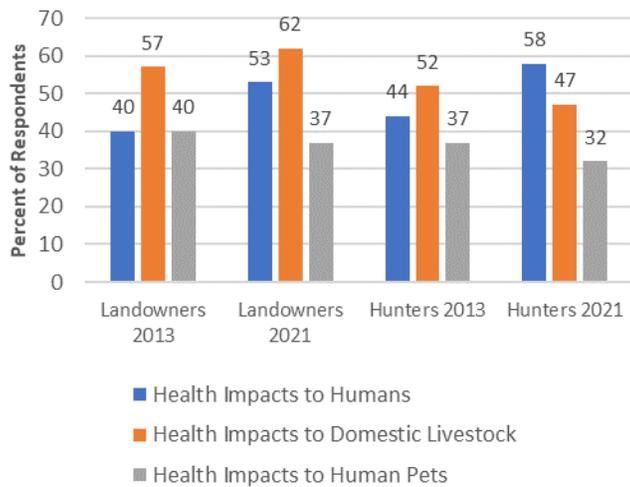
Figure 1. Response to: “Prior to receiving this survey, on a scale from 1 (nothing) to 5 (a lot), how much have you heard about CWD?” (2021 and 2013 FWP Surveys)



PERCEPTIONS REGARDING POTENTIAL HEALTH IMPACTS OF CWD TO HUMANS, DOMESTIC LIVESTOCK & PETS

Concern among landowner and hunters about the potential health impacts of CWD to humans generally increased from 2013 to 2021 (see Figure 3 on the next page). And, compared to 2013, landowners in 2021 reported being more concerned about the potential health impacts of CWD to domestic livestock. Overall, there was a slight drop in concern about the potential health impacts of CWD to pets among both landowners and hunters from 2013 to 2016. Again, it should be noted that CWD had yet to be detected in Montana in 2013.

Figure 3. Percent of respondents who reported they are “concerned” or “very concerned” about the health impacts to humans, domestic livestock, and human pets from CWD. (2021 and 2013 FWP Surveys)



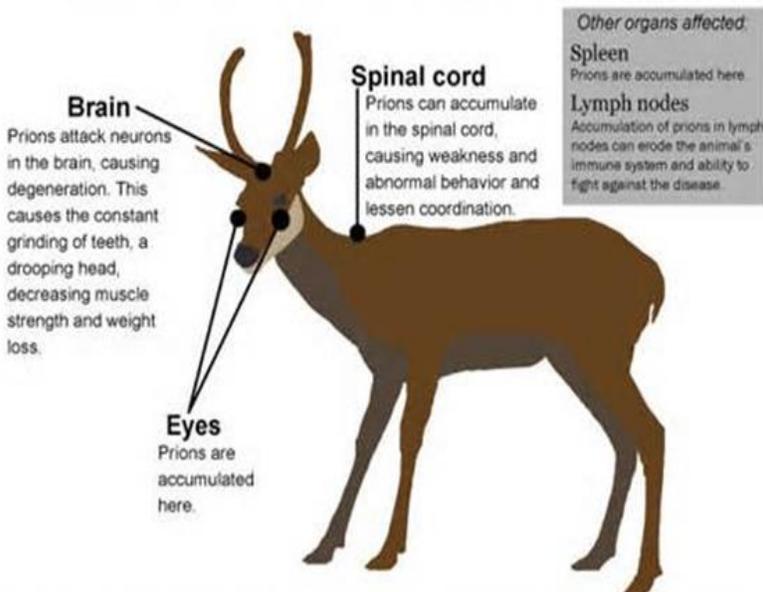
AWARENESS OF IMPORTANT INFORMATION REGARDING CWD IN MONTANA

Study participants were asked about their awareness of several important pieces of information related to CWD and preventing the spread of this wildlife disease in Montana. There are several information topics that would likely benefit from increased public education (see Table 1). Only 15-36 percent of the landowner and hunter survey respondents (depending on the survey) were aware of the first three topics presented in this table. Particularly low awareness regarding cervid-derived glandular scents & lures (and the fact that these products can spread CWD) was identified in both the landowner and hunter surveys.

Table 1. Percent of respondents reporting “YES” they were aware of the following information regarding CWD. (2021)

	Landowners	Hunters
For hunters, all scents and lures that use cervid-derived glandular scents (from deer, elk, moose, or reindeer) can spread CWD.	17	15
Among mule deer, adult males are much more likely to be infected by CWD and are thought to play an important role in the spread and transmission of the disease within populations.	33	36
Among white-tailed deer, adults are more likely to be infected than yearlings and fawns, but there is less of a difference in the infection rates between the sexes when compared to mule deer.	23	29
Hunters harvesting deer, elk, or moose in other states or Canadian provinces with CWD can only transport quarters, boned-out meat, processed meat, cleaned skull plates, antlers, or taxidermy mounts into Montana. The remaining carcass must be left or disposed of in the state or province where it was harvested.	53	63
Currently, within Montana, there are no big game carcass transport restrictions for animals harvested in the state.	47	56
Sample submission is voluntary throughout Montana. If hunters want their deer, elk, or moose tested, they can submit samples themselves by following steps on the Montana CWD Self-Submission Guide or by visiting a CWD Sampling Station.	67	78

ORGANS AFFECTED BY CHRONIC WASTING DISEASE



ACCEPTABILITY OF POTENTIAL CWD MANAGEMENT ACTIONS

Study participants were asked about the acceptability of several potential CWD management actions that could be considered for implementation in Montana (see Table 2 on the next page). Survey results demonstrate support for potential management actions that focus on reducing white-tailed deer and mule deer populations in places where CWD has been detected, including the reduction of mule deer male densities/numbers in those areas. However, there was less support for management actions that focus on eliminating hunting regulations aimed at producing more mature mule deer bucks in hunting districts where CWD has been detected or adjacent to those districts as a preemptive measure.

Table 2. Percent of respondents reporting selected potential CWD management actions to be “acceptable” or “very acceptable”. (2021)

	<u>Landowners</u>	<u>Hunters</u>
In areas of the state where CWD has been detected, increase hunter harvest opportunity to reduce the number and/or density of those species being affected by the disease.	66	69
In areas of the state where CWD has been detected, establish incentives for private landowners to increase hunter access on their lands to reduce the number and/or density of those species being affected by the disease.	61	78
This question is specific to <u>white-tailed deer</u> . In areas where CWD has been detected, implement hunting regulations aimed at reducing white-tailed deer populations.	64	66
This question is specific to <u>mule deer</u> . In areas of the state where CWD has been detected, implement hunting regulations aimed at reducing mule deer populations.	59	60
This question is specific to <u>mule deer</u> . In areas of the state where CWD has been detected, implement hunting regulations aimed at reducing the number and/or density of adult male mule deer (the group with the potential for some of the highest rates of infection and transmission).	59	63
This question is specific to <u>mule deer bucks</u> . Data suggests that CWD prevalence is higher in areas managed for larger numbers of mature bucks. In areas where CWD has been detected, eliminate regulations aimed at producing more mature bucks.	48	46
This question is specific to <u>mule deer bucks</u> . Data suggests that CWD prevalence is higher in areas managed for larger numbers of mature bucks. In areas where CWD has NOT been detected, pre-emptively eliminate regulations aimed at producing more mature bucks.	32	29
To reduce the potential for spread of CWD, implement similar CWD management actions for hunting districts adjacent to hunting districts where CWD has been detected.	50	50

OPINIONS REGARDING FWP’S EFFORTS TO MANAGE CWD IN MONTANA

Landowners and hunters were asked about their level of agreement with several statements concerning FWP’s efforts to manage CWD in Montana. Survey findings

show generally positive results (Table 3). Satisfaction with FWP’s efforts to manage CWD, trust in FWP to manage CWD, and trust in the CWD information provided to the public by FWP were all relatively high. However, both landowners and hunters are of mixed opinions about the need for FWP to be doing more to help prevent the spread of CWD in the state. This is not surprising considering the challenging nature of managing and controlling this wildlife disease in Montana and elsewhere.

Table 3. Response to: “On a scale from 1 (strongly disagree) to 5 (strongly agree), to what extent do you agree or disagree with the following statements regarding efforts of FWP to manage CWD in Montana?” (2021)

	1	2	3	4	5
Overall, I am satisfied with how FWP is managing CWD in Montana	3.4% 2.4%	7.4% 3.5%	41.4% 32.8%	34.4% 41.7%	13.4% 19.7%
I trust that FWP knows how to effectively manage CWD in Montana	7.5% 4.1%	12.4% 8.2%	27.8% 24.0%	33.1% 37.8%	19.3% 26.0%
I trust that FWP provides the public with the best available information regarding CWD in Montana	4.0% 1.9%	5.7% 4.5%	25.9% 14.2%	41.5% 42.3%	22.9% 37.1%
I trust that FWP tells the truth about CWD and its impact in Montana	5.2% 2.8%	7.9% 4.7%	22.2% 14.6%	37.9% 34.0%	26.8% 43.9%
FWP should be doing more to help prevent the spread of CWD in Montana	5.2% 6.0%	14.9% 16.4%	42.8% 41.9%	23.1% 20.7%	13.9% 14.9%

Landowners in blue Hunters in brown

LANDOWNER SPECIFIC QUESTIONS

Forty-seven percent of the landowner respondents indicated they do not own land in places where CWD has been detected in Montana, and 37 percent were unsure. **Only 16 percent (N=83) reported they own land in places where CWD had been detected.**

- Of those respondents who reported owning land in places where CWD has been detected, 81 percent reported they provide big game hunting access on those lands. Only 10 percent of those landowners reported they are providing a lot less or less hunting access due to CWD than what they normally would have provided. Twenty-two percent are providing a lot more or more hunting access due to CWD.
- In addition, of those respondents who reported owning land in places where CWD has been detected, 51 percent reported they raise livestock on those lands. Of the

landowners who raise livestock on lands with CWD, only seven percent indicated they are managing their livestock operations differently due to CWD than what they normally would have.

Survey respondents indicated that the best ways for FWP to keep private landowners informed about CWD would be to...

- Send information directly by mail or email (70 percent).
- Provide information in the Montana hunting regulations (62 percent).
- Develop press releases sent out via the media (61 percent).

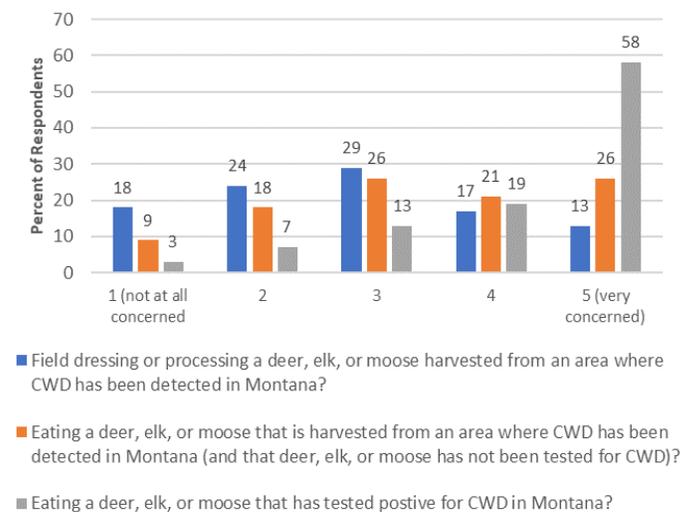
HUNTER SPECIFIC QUESTIONS

Ninety percent of the big game hunter respondents reported they had hunted DEER in Montana during the past five years. Thirty-four percent of those hunters indicated that CWD has not been detected in the hunting district where they most prefer to hunt deer, and 35 percent were unsure. **Thirty-two percent reported that CWD has been detected in the hunting district where they most prefer to hunt deer.** Of those respondents, only three percent reported they are no longer hunting deer in those districts due to the presence of CWD. And, 17 percent reported they are hunting deer more or a lot more in those districts.

Eighty-one percent of the hunter respondents reported they had hunted ELK in Montana during the past five years. Thirty-six percent of those hunters indicated that CWD has not been detected in hunting district where they most prefer to hunt elk, and 46 percent were unsure. **Eighteen percent reported that CWD has been detected in the hunting district where they most prefer to hunt elk.** Of those respondents, only two percent reported they are no longer hunting elk in those districts due to the presence of CWD. And, 23 percent reported they are hunting elk more or a lot more in those districts.

Hunters were also asked to report their level of concern about field dressing game harvested in an area where CWD has been detected, eating game that is harvested from an area where CWD has been detected (but the animal harvested has not been tested for CWD), and eating game that has tested positive for CWD. The highest level of concern was expressed about eating a deer, elk, or moose that has tested positive for CWD in Montana (Figure 4).

Figure 4. Hunter response to: "On a scale from 1 (not at all concerned) to 5 (very concerned), how concerned would you be about...". (2021)



Survey respondents indicated that the best ways for FWP to keep resident big game hunters informed about CWD would be to...

- Provide information in the Montana hunting regulations (80 percent).
- Provide up-to-date information on FWP's website (77 percent).
- Send information directly by mail or email (66 percent).
- Develop press releases sent out via the media (60 percent).

DISCUSSION

FWP needs assistance from private landowners, resident hunters, and the public to successfully manage CWD in Montana. Keeping this in mind, FWP conducted surveys of private landowners and resident big game hunters in 2021 to gather valuable insight about how to better manage CWD and prevent the spread of this wildlife disease in Montana.

From these two surveys, it is apparent that private landowners and resident big game hunters are very much concerned about the presence of CWD in the state. Yet, some landowners and hunters are not very aware of this wildlife disease. Thirty-seven percent of landowners did not know if CWD had been detected in areas of the state where they own land, and 35-46 percent of hunters did not know if CWD had been detected in the hunting district where they most prefer to hunt deer or elk.

Furthermore, concerns about the potential impact of CWD to humans and domestic livestock increased from 2013 to 2021...despite no known risks to these groups. Also, high percentages of survey respondents for both the landowner and resident big game hunter surveys were unaware of several important pieces of information related to CWD and preventing the spread of this wildlife disease in Montana. This speaks to a need for FWP to broaden and expand its communication and education efforts regarding CWD. Topics that would likely benefit from additional targeted communication include, but are not limited to, the following:

- CWD distribution and prevalence on the Montana landscape.
- Risks of CWD to humans, domestic livestock, and pets.
- Between-state and within-state restrictions on the transportation of harvested big game.
- Risks of cervid urine/glandular scent lures.
- Differences between sex/age group risks in mule deer and white-tailed deer.
- Importance of keeping buck to doe ratios down for mule deer populations.
- CWD testing opportunities and details (e.g., where, how, and that it's free).
- CWD positive animals may not always look sick.

With respect to private land ownership, 22 percent of landowners are providing more big game hunting access than what they normally would have in places where they know CWD has been detected. However, the presence of CWD on the landscape is not dramatically affecting how most landowners manage their livestock. This is good news, considering there are no known risks to domestic livestock that have been identified from CWD to date.

With respect to big game hunting, survey results show that many deer and elk hunters are hunting more in places where they know CWD is on the landscape. Whether or not these surveys findings are a result of increased hunting opportunities associated with CWD management, or increased hunting participation due to the COVID-19 pandemic, remains unknown. Regardless, it appears CWD has not yet contributed to reduced hunting of deer and elk in places where this wildlife disease has been detected in Montana.

Seventy-seven percent of hunters are very much concerned about eating harvested big game that has tested positive for CWD. While still a concern, less apprehension was expressed about field dressing (or

processing) big game harvested in an area where CWD has been detected or eating an untested animal harvested from such an area. Again, it appears FWP would benefit from broadening and expanding its communication and education efforts regarding these specific hunter related topics.

Survey results demonstrate support for potential management actions that focus on reducing white-tailed deer and mule deer populations in places where CWD has been detected, including the reduction of mule deer male densities/numbers in those areas. However, there was less support for management actions that focus on eliminating hunting regulations aimed at producing more mature mule deer bucks in hunting districts where CWD has been detected or adjacent to those districts as a preemptive measure.

Lastly, landowner and hunter satisfaction with FWP was found to be quite high as was trust in the agency to manage this challenging wildlife disease. Information from both surveys will be used by FWP to help inform CWD management and guide public outreach efforts regarding CWD and its spread in Montana.

This research summary provides selected finding from both the landowner and resident big game hunter surveys conducted by FWP in 2021. More detailed survey findings are available in a broader report available from FWP (Lewis, et. al. 2021). 



PROTECT OUR HERDS:

Properly Dispose of Carcasses

Help prevent the spread of **CWD**

Once an animal with CWD dies, **any part** of the carcass can transmit the disease for **at least two years**. Safely dispose of all animal parts like you would household garbage, and you'll be helping to keep local herds "clean" of CWD and following the law.

TIP MONT
1-800-347-6668

Report unlawful dumping to local game warden: **1-800-TIP-MONT**

fwp.mt.gov/cwd



REFERENCES

Lewis, Michael S., Emily Alberg, Neil Anderson, Jennifer Ramsey, Ryan Rauscher, Peggy O'Neill, Marc Kloker, and Bob Gibson. 2021. *Results of the Private Landowner & Resident Big Game Hunter CWD Surveys Conducted by FWP in 2021*. A Report Prepared by the Responsive Management Unit (Human Dimensions Program) of Montana Fish, Wildlife & Parks. Helena, MT: Responsive Management Unit (Human Dimensions Program) of FWP.

Lewis, Michael S., Justin Gude, David Risley, and Zoe King. 2013. *Selected Results from Survey of Resident Big Game Hunters & Private Landowners Regarding the Topic of Chronic Wasting Disease*. HD Program Research Summary No. 36. Helena, MT: Human Dimensions Program, Montana Fish, Wildlife & Parks.

ABOUT THE AUTHORS

Michael S. Lewis, Human Dimensions Program Supervisor. Responsive Management Unit of FWP, Helena, Montana.

Emily Alberg, Disease Ecologist. Wildlife Division of FWP, Region 3, Bozeman, Montana.

Neil Anderson, Regional Wildlife Manager. Wildlife Division of FWP, Region 1, Kalispell, Montana.

Jennifer Ramsey, Wildlife Veterinarian. Wildlife Division of FWP, Region 3, Bozeman, Montana.

Ryan Rauscher, Wildlife Biologist. Wildlife Division of FWP, Region 4, Conrad, Montana.

Peggy O'Neill, Information Bureau Chief. Communication & Education Division of FWP, Helena, Montana.

Marc Kloker, Regional Information & Education Program Manager. Communication & Education Division of FWP, Region 6, Glasgow, Montana.

Bob Gibson, Regional Information & Education Program Manager. Communication & Education Division of FWP, Region 5, Billings, Montana.

TO OBTAIN COPIES OF THIS SUMMARY

Contact the Human Dimensions Program of FWP by phone at (406) 444-4308 or go to FWP's website at <https://fwp.mt.gov/>.

CWD Sampling & Test Results in Montana

Chronic Wasting Disease (CWD) samples collected from **05/16/2017 - 01/07/2021**

